SAFT AMERICA INC TRANSPORTATION DIV -- NICKEL CADMIUM AIRCRAFT BATTERY -- 6140-01-112-3978

========== Product Identification ==========

Product ID:NICKEL CADMIUM AIRCRAFT BATTERY
MSDS Date:02/23/2000
FSC:6140
NIIN:01-112-3978
Status Code:A
MSDS Number: CKDMN
=== Responsible Party ===
Company Name:SAFT AMERICA INC TRANSPORTATION DIV
Address:711 INDUSTRIAL BLVD
Box:1886
City:VALDOSTA
State:GA
ZIP:31601-188
6
Country:US
Info Phone Num:912-245-2824
Emergency Phone Num:912-245-2824
Chemtrec Ind/Phone:(800)424-9300
CAGE:09052
=== Contractor Identification ===
Company Name:SAFT AMERICA INC.
Address:711 INDUSTRIAL BLVD
Box:1886
City:VALDOSTA
State:GA
ZIP:31602
Country:US
Phone:912-247-2331
CAGE:09052

========== Composition/Information on Ingredients ==========

Ingred Name:CADMIUM (AS CADMIUM, CADMIUM HYDROXIDE, AND CADMIUM OXIDES)
CAS:7440-43-9
RTECS #:EU9800000
= Wt:8.
OSHA PEL:SEE 1910.1027

EPA Rpt Qty:10 LBS
DOT Rpt Qty:10 LBS

Ingred Name:NICKEL (AS NICKEL, NICKEL HYDROXIDE, AND NICKEL OXIDE)
CAS:7440-02-0
RTECS #:QR5950000
= Wt:38.
OSHA PEL:1 MG/M3
ACGIH TLV:1 MG/M3

Ingred Name:ELECTROLYTE SOLUTION (30% POTASSIUM HYDROXIDE)
CAS:1310-58-3
RTECS #:TT2100000
= Wt:19.
ACGIH STEL:C2 MG/M3
EPA Rpt Qty:1000 LBS
DOT Rpt Qty:1000 LBS

Ingred Name:COPPER
CAS:7440-50-8
RTECS #:GL5325000
= Wt:9.
OSHA PEL:1 MG/M3
ACGIH TLV:1 MG/M3
EPA Rpt Qty:5000 LBS
DOT Rpt Qty:5000 LBS

Ingred Name:NYLON
II CONTAINER
= Wt:15.

========== Hazards Identification ==========

Health Hazards Acute and Chronic:EYE-CONTACT WITH ELECTROLYTE SOLUTION CAUSES VERY RAPID, SEVERE DAMAGE. EXTREMELY CORROSIVE TO EYE TISSUES. MAY RESULT IN PERMANENT BLINDNESS. SKIN-CONTACT WITH ELECTROLYTE SOLUTION MAY CAUSE SERIOUS BURNS TO SKIN TISSUES. INGESTION-ELECTROLYTE SOLUTION CAUSES TISSUE DAMAGE TO THROAT AREA & GASTRO/RESPIRATORY TRACT. INHALATION-DURING ACTIVATION PROCE
DURES
MIST GENERATED MAY CAUSE VARYING DEGREES O F IRRITATION TO THE NASAL MUCOUS MEMBRANES & RESPIRATORY TRACT TISSUES. VARYING FROM MILD IRRITATION OF NASAL MUCOUS MEMBRANES TO DAMAGE OF LUNG TISSUE PROPER.
Explanation of Carcinogenicity:NIOSH RECOMMENDS THAT NICKEL & CADMIUM BE TREATED AS OCCUPATIONAL CARCINOGENS.
Effects of Overexposure:EYE EFFECTS: CONTACT WITH NICKEL OXIDE MAY CAUSE MINOR IRRITATION. SKIN EFFECTS: CONTACT WITH NICKEL COMPOUNDS MAY CAUSE SKIN S

ENSITIZATION, RESULTING IN CHRONIC ECZEMA
OR NICKEL ITCH. INGESTION: IN GESTION OF CADMIUM AND/OR NICKEL COMPOUNDS CAUSES NAUSEA AND INTESTINAL DISORDERS. INHALATION: INHALATION OF CADMIUM OXIDE MAY CAUSE DRY THROAT, COUGH, HEADACHE, VOMITING, CHEST PAIN, CHILLS, EXCESS IVE OVEREXPOSURE MAY RESULT IN PULMONARY EDEMA, BREATHING DIFFICULTY, PROSTATION, AND KIDNEY DAMAGE.

========== First Aid Measures ==========

First Aid:ELECTROLYTE; EYE CON
TACT: FLUSH WITH PLENTY OF WATER FOR AT
LEAST 20 MINUTES. GET IMMEDIATE MEDICAL ATTENTION. SKIN CONTACT: REMOVE CONTAMINATED CLOTHING AND FLUSH AFFECTED AREA WITH PLENTY OF WAT ER FOR AT LEAST 20 MINUTES. INGESTION: DO NOT INDUCE VOMITING. DILUTE BY GIVING LARGE VOLUMES OF WATER OR MILD. GET IMMEDIATE MEDICAL ATTENTION. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERS ON. INHALATION: REMOVE TO FRESH AIR. GIVE OXYGEN OR ARTIFICIAL RESPIRATION IF NEEDED. GET
IMMEDIATE MEDICAN ATTENTION.
NICKEL OXIDE-SKIN CONTACT: WASH WITH COLD WATER AND SOAP.

========== Fire Fighting Measures ==========

Extinguishing Media:NONE PROVIDED BY MFR.
Fire Fighting Procedures:USE SELF CONTAINED BREATHING APPARATUS TO AVOID BREATHING TOXIC FUMES. WEAR PROTECTIVE CLOTHING & EQUIPMENT TO PREVENT POTENTIAL CONTACT WITH ELECTROYTE SOLUTION OR MIXTURE OF WATER & SOLUTION. DISCON NECT OR CUT ALL CABLES TO & FROM BATTER.
Unusual Fire/E
xplosion Hazard:ELECTROLYTE SOLUTION IS CORROSIVE TO ALL HUMAN TISSUE. IT WILL REACT VIOLENTLY WITH MANY ORGANIC CHEMICALS, ESPECIALLY NITROCARBONS & CHLOROCARBONS. ELECTROLYTE SOLUTION REACTS WITH ZINC, ALUMINUM, TI N, & OTHER ACTIVE MATERIALS RELEASING FLAMMABLE HYDROGEN GAS.

========== Accidental Release Measures ==========

Spill Release Procedures:ELECTROLYTE SOLUTION SPILLS: SMALL (UP TO 5 GL): FLUSH WITH WATER & NEUTRAALIZE WITH CITRIC ACID. LG: CONT

AIN
MATERIAL IN SUITABLE CONTAINERS OR HOLDING AREA. DO NOT ALLOW MATERIAL TO ENTER SEWERS, ST REAMS, OR STORM CONDUCTS. RECOVER MATERIAL WITH VACUUM TRUCK & DISPOSE OF PROPERTY. REPORTABLE QUANITY: 1,000 POUNDS. 40 CFR 117.13.
Neutralizing Agent:CITRIC ACID

========== Handling and Storage ==========

Handling and Storage Precautions:THESE CELLS AND THE BATTERIES CONSTRUCTED FROM THEM MAY BE HIGHLY CHARGED AND ARE CAPABLE OF HIGH ENERGY DISCHARGE
. CARE SHOULD BE TAKEN TO HANDLE CELLS PROPERLY TO AVOID SHORTING OR MISUSE THAT WILL RESULT IN A RAPID, UNCONTROLLED ELECTRICAL, CHEMICAL, OR HEAT ENERGY RELEASE.
Other Precautions:DO NOT TRANSPORT ACTIVATED BATTERIES WITHOUT VENT CAP IN PLACE. WHEN REMOVING BATTERY FROM SERVICE, VISUALLY INSPECT FOR LEAKAGE PRIOR TO HANDLING. IF LEAKAGE HAS OCCURRED FOLLOW SPILL MANAGEMENT PR OCEDURES. DO NOT ALLOW AN EXPOSED FLAME OR SPARK TO COME NEAR THE CELLS.

========== Exp
osure Controls/Personal Protection ==========

Respiratory Protection:USE NIOSH/MSHA APPROVED RESPIRATOR DURING LEVEL CHARGING TO MAINTAIN EXPOSURE LEVELS BELOW THE TWA.
Ventilation:PERFORM LEVEL CHARGING PROCEDURES IN A WELL VENTILATED AREA. BATTERY OPERATING AREAS MUST BE WELL VENTILATED TO REMOVE NORMAL GASES GENERATED
Protective Gloves:ANY WATER-INSOLUBLE NON-PERMEABLE GLOVE (I.E. SYNTHETIC RUBBER)
Eye Protection:USE SPLASH GOGGLES OR FACE SHIELD WHENEVER HANDLING A B
ATTERY
Other Protective Equipment:RUBBER BOOTS, RUBBER APRON OR RAINWEAR OR EQUIVALENT IF EXPOSURE TO ELECTROLYTE SOLUTION IS LIKELY.
Work Hygienic Practices:NONE PROVIDED BY MFR.
Supplemental Safety and Health
FIRE & EXPLOSION: CADMIUM FUMES MAY BE RELEASED WHEN BATTERIES ARE SUBJECTED TO HIGH TEMPERATURES. IN CASE OF FIRE, DO NOT BREATH SMOKE AND FUMES! CAUTION: DO NOT ALL SULFURIC ACID.

========== Physical/Chemical Properties ==========

HCC:B1
Spec Gravity:1

.250 TO 1.30(ELECTROLYTE
Evaporation Rate & Reference:NOT DETERMINED
Solubility in Water:ELECTROLYTE COMPLETELY SO
Appearance and Odor:NONE PROVIDED BY MFR.
Percent Volatiles by Volume:NONE PROVIDE
Corrosion Rate:NONE PROVIDED BY MFR

========== Stability and Reactivity Data ==========

Stability Indicator/Materials to Avoid:YES
ALUMINUM, ZINC, TIN, & OTHER ACTIVE METALS, ACID, CHLORINATED &
AROMATIC HYDROCARBONS, NITROCARBONS, & HALOCARBONS.
TRICHOLORETHYLENE WILL RE
ACT WITH ELECTROLYTE SOLUTION TO FORM
DICHLOROACETYLENE WHICH IS SPONTANSOUSLY COM
Stability Condition to Avoid:NONE PROVIDED BY MFR.
Hazardous Decomposition Products:NICKEL OXIDE, CADMIUM, CADMIUM OXIDE,
& POTASSIUM HYDROXIDE. NOTE THAT NORMAL REACTIONS INSIDE BATTERY
LIBERATE FLAMMABLE HYDROGEN GAS. BATTERY MUST BE VENTED TO
ATMOSPHERE.
Conditions to Avoid Polymerization:WILL NOT OCCUR

========== Disposal Considerations ==========

Waste Disposal Methods:
THE STORAGE BATTERY IS A UNIVERSAL WASTE UNDER
RCRA. IT MAY BE RETURNED TO SAFT FOR RECYCLING. BATTERY IS TCLP
TOXIC. BATTERY & ELECTROYLTE SOLUTION ARE CORROSIVE. IF NOT
RECYCLED. MUST BE DISPOSED IN ACCORDANCE WITH ALL FEDERAL, STATE &
LOCAL REGULATIONS.